LANDSCAPING LOMA LINDA

Ideas for a Beautiful Landscape
That Will Save Water and
Allow You Time to Enjoy Your Garden!

By: Janet S. Hartin
Horticulture Advisor
University of California Cooperative Extension
San Bernardino County

In cooperation with….

City of Loma Linda
San Bernardino Valley Municipal Water District
"The Partnership" Landscape Architects

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INTRODUCTION

Loma Linda is a special city with a proud heritage, reflected in its diverse population, civic pride, and beautiful landscape.

The history of Loma Linda goes way back to 1875, when Mound City was developed over a 200 acre parcel. Lush landscapes and vegetable gardens became an integral part of early Loma Linda, which is Spanish for "Hill Beautiful", in part reflective of the significant role plants played in the early days.

Because of the high quality of life in Loma Linda, more and more people are choosing to make it their home. Along with growth comes a greater need for water conservation. Each of us has a responsibility to use water wisely, in and out of our homes. The good news is, by following a few simple guidelines, most of us can greatly reduce our outdoor water use and save money without sacrificing beauty.

LANDSCAPING LOMA LINDA is the result of a joint effort to conserve water in urban landscapes by University of California Cooperative Extension, in San Bernardino County, the City of Loma Linda, the San Bernardino Valley Municipal Water District, and "The Partnership." It goes hand-in-hand with the recent establishment of the three mile water-efficient median strip along Barton Road, the longest such landscape in California.

Whether you are landscaping a new home in Loma Linda or want to update your current landscape, there are ways you can save water and achieve an attractive landscape. Often, you can actually improve the appearance of your landscape in California.

Most people tend to over-water rather than under-water. By applying water based on the local climate, you can cut back on water waste substantially. Many of our plants come from dry climates and do well on little water, once established. A LAWN WATERING GUIDE for Loma Linda provides this information in an easy-to-use format, and is found on page 6.

Much of the water wasted in landscapes is due to broken or improperly installed and/or maintained sprinkler systems. Keeping your irrigation system in good repair by fixing broken sprinklers and straightening crooked sprinklers can reduce water waste more than anything else you can do.

There are lots of professionals who can help you save water in your landscape—from plant selection to maintenance to irrigation design, to installation and management. Feel free to phone University of California Cooperative Extension at (909) 387-2171 for a list of these individuals.

DO YOU KNOW HOW TO READ YOUR WATER METER?

Loma Linda homeowners are lucky to be on metered water system. While most of us take this for granted, think about residents of many California cities who aren't on meter, it is impossible for them to easily determine if they have a leaky system or if they are using more or less water than they did a year ago.

Checking your water meter shows you how much water you are using, besides indicating leaks. In fact, slow plumbing leaks can add up to large water losses over time. You can check for leaks by doing the following:

1. Turn off all water-using appliances and faucets in your home. Find your meter box (usually in a concrete box near the street) and write down a beginning reading.

2. Wait one hour, and record the numbers again. If the gauges have moved, you have a leak! You may either troubleshoot the leak yourself or call a plumber if the problem, is complicated.

You can also check how much water you are using over a weekly basis in your landscape. Record your meter reading at the beginning of the week, and again at the end of the week at the same time. Most meters record in cubic feet. Here's how to convert your meter reading to gallons of water used per week.

Date	**Time**	**Meter Reading** (cubic feet)
July 1, 1993	7 p.m.	17,250
July 8, 1993	7 p.m.	17, 500

1. Subtract the first reading from the second: 17,500
   to find out how many cubic feet of water -17,250
   was used: 250 cubic feet used that week

2. To convert cubic feet to gallons, divide 7.5/cubic feet used.
   In our example: 7.5 (gal/cubic foot) x 250 (cubic feet used)
   = 1.875 gallons used that week

Divide the gallons used that week by 7 (days in one week)
In our example: 1,875 divided by 7 = 267.8 gallons a day average use.

YOU DON'T HAVE TO REPLACE YOUR LANDSCAPE!

Are you happy with your present landscape but just want to save a little water, and some money? Would you like to add a plant or two you like in the Barton Road project to your landscape? Relax! Saving water in your yard has as much to do with regularly maintaining your sprinkler system and how you water than with what plants you select. So enjoy old favorites, as well as newer varieties you would like to try.

To conserve water, there is no need to tear out your current landscape in favor of cacti and concrete, unless that is your personal preference. In fact, cementing over the soil can increase the water needs of surrounding plants due to "heat island" effects. Cooling costs inside your house can also be increased, if shade producing plants are sacrificed.

Plants that do the best in Loma Linda are suited to the inland valley climate. They will do better in all respects than those preferring a costal climate. While many native plants do well, hundreds of introduced plants thrive in our inland climate, and do well on little water once established. In fact, most of us *over-water* traditional landscapes rather than *under-water*. Almost all plants prefer to dry out some between waterings rather than "*sit*" in water-logged soil. When sprinkler systems need repair, or there is poor drainage, water often accumulates in root zones leading to root rot and even death.

New plantings need steady water to establish themselves. After one or two seasons, you can usually cut back some on watering. So, if you are satisfied with your current landscape, follow the suggestions throughout ***LANDSCAPING LOMA LINDA*** to reduce outdoor water use and increase enjoyment without having to start all over!

HYDROZONING (GROUPING PLANTS BY WATER NEEDS)

Grouping plants together based on similar water needs can save lots of water. The problem is, we don't know just how much water most ornamental plants need, although research is ongoing at this time. But, there are some things you can do when designing your landscape to take advantage of hydrozoning whenever possible:

- For a hydrozone to be effective, the irrigation system should be designed around your landscape plantings.
- Lawns do best on sprinkler irrigation, while trees, shrubs and garden plants do better on drip systems. Using separate valves to irrigate these areas individually can save lots of water.
- Match the capacity of the controller, with the number of hydrozones in your landscape design. Match flow rates and size as well. The selection of valve sizes should be based on the average flow rate required for your entire landscape.
- The Loma Linda Barton Road median strip project is a very good example of hydrozoning. Take a look!

SAVING EMERGY THROUGH WISE LANDSCAPING

Besides providing beauty, landscape plants can reduce your air-conditioning and heating bills, provide shade, and reduce wind.

Well place trees can reduce air-conditioning bills substantially, and can also reduce the energy required to operate the unit. Trees vary in the shade they produce, based on their canopy density.

For optimum shade and cooling, select a tree with a dense canopy and broad growth. But, don't plant trees too close to the house, because they need adequate room to grow!

Evergreen trees planted on the east and west sides of your house will greatly reduce your cooling needs in the summer. Deciduous trees (those that drop their leaves in winter), planted on the south and west side of you house will provide shade in the summer, but allow heat from the sun to enter your home during the winter.

Winds dry out plants and can reduce the enjoyment of your landscape and home. Strong winds can be reduced by well-positioned trees planted together in a windbreak. Windbreaks should be placed perpendicular to prevailing winds. Two or more rows of trees may be necessary for desired effects.

Lawns also provide cooling, and will result in a garden several degrees cooler than a "heat island" from concrete.

IRRIGATION SYSTEMS FOR YOUR LANDSCAPE

Over the past few years, exciting innovations in irrigation systems have come about, leading to more precise irrigation. But and irrigation system is only as good as its management!

Sprinkler systems are commonly used to water lawns and some groundcovers. Drip systems are useful for trees, shrubs, vines, and garden plants. They apply water slowly to the root zone of the plant. Drip systems save water that is otherwise evaporated from the soil, and can reduce water waste substantially.

The new micro-or mini-sprinkler systems are actually considered drip systems, because they are low-flow, low-volume systems. They are useful for irrigating landscape trees a year or two after being transplanted to the landscape. Newly planted landscape trees do well on drip systems with emitters that can be placed close to the trunk, where most roots are, after being transplanted out of pots.

Drip systems with emitters include spaghetti tubing or PVC pipe. While both can be used, PVC pipe lasts longer because of its durability. However, spaghetti tubing with emitters can be replaced later with mini-sprinklers as trees mature.

Maintaining Your System

Drip Systems

While both drip systems and conventional sprinkler systems need to be routinely maintained, drip systems are easier to check and keep in good operation.

Each month, clean drip filers, flush lines, and check for clogged emitters. Emitters clog relatively easily, and need to be regularly checked. Plants that suddenly wilt and appear stressed are often good indicators of a clogged emitter!

Sprinkler Systems

Did you know you may be wasting 20% or more of the water you apply to your lawn just because your sprinkler system needs repairs? Even a properly designed system needs regular upkeep to water effectively.

A common problem in lawns is sprinklers that do not apply water evenly. Brown spots are often caused by uneven watering. A lot of water is wasted by *over-watering* your whole lawn to compensate for a few dry areas due to poor water coverage. Try this simple "can test" to check your sprinkler uniformity:

1. Set out six or seven cans of the same type (tuna or cat food cans work well) between sprinkler heads, as evenly as possible.

2. Map out on paper the location of the cans.

3. Run your sprinkler for 20 minutes.

4. Use a ruler to measure the height of water in each can and record this number of your page.

5. Look at the numbers you recorded. Is there an obvious area where the water collected is less than the other area? If so, check the closest sprinkler for a problem such as: a broken sprinkler head, sunken sprinkler, crooked sprinkler, turf growing around the sprinkler head, sand or debris plugging the sprinkler, or unmatched sprinkler heads that apply water at different rates.

RETROFITTING AND EXISTING IRRIGATION SYSTEM

Retrofitting and old irrigation system to accommodate hydrozones can mean as little as adding or replacing valves or controllers or as much as moving entire irrigation lines or plants. Remember that when one aspect of the system is changed, other parts are affected; sometimes this creates major problems. In that case, having an entirely new irrigation system installed may be preferential.

A popular retrofitting tactic involves changing valves or inserting a pressure regulator to convert a one-inch lateral using impact heads to a low-volume microspray or drip line for groundcovers or shrubs. If you are handy and have this time, this may be a worthwhile venture. However, hiring a professional irrigation designer is often the best route. He or she can help you decide whether retrofitting can solve your irrigation problems, or if you require and entirely new system.

LAWN WATERING GUIDE

1. **Determine the output of your sprinklers**.

   Set six or more straight-sided cans of the same type (tuna or cat food work well) on your lawn between sprinkler heads. Run the sprinklers to 20 minutes and measure the water in each can with a ruler. Determine the average amount of water in each can. MULTIPLY BY 3 TO DETERMINE SPRINKLER OUTPUT PER HOUR.

2. **Determine how long to irrigate each week**.

   The following table tells you the total number of inches of water your lawn needs each week. Find your sprinkler output and turfgrass type (warm-or cool-season) to determine how long to irrigate.

MINUTES TO IRRIGATE EACH WEEK *

	WARM SEASON TURFGRASS (bermuda, zoysia, St. Augustine) Sprinkler, Output (in./hr)				COOL SEASON TURFGRASS (tall fescue, rye, bluegrass) Sprinkler, Output (in./hr)			
	0.5”	1”	1.3”	2”	0.5	1”	1.5”	2”
January	42	21	14	10	56	28	19	14
February	57	28	19	14	75	38	25	19
March	80	40	27	20	106	53	35	27
April	96	48	32	24	128	64	43	32
May	119	60	40	29	159	80	53	40
June	144	72	48	36	193	96	64	48
July	165	83	55	41	221	110	74	55
August	155	77	52	39	207	103	69	52
September	124	62	41	31	165	82	55	41
October	88	44	29	22	117	59	39	29
November	54	27	18	14	73	36	24	18
December	42	21	14	10	55	23	19	14

* If run-off or brown spots appear with weekly applications, divide the weekly total by 2, 3 or 4 to irrigate 2, 3 or 4 times a week instead of once.

HOW DO YOU KNOW WHEN TO WATER?

Knowing **when** to water is as important as knowing how many minutes you should run your system. If your soil dries down too much between waterings, plants will suffer. But, if you water too often, you may waste lots of water to run-off and end up with root rot.

The LAWN WATEING GUIDE (above) tells you the total number of minutes to water your lawn each week. Coupling this information with knowing when to apply it is not complicated, and becomes second-nature with practice.

Here is an easy way to gauge when to irrigate. Each watering should be just to the point of run-off. Run-off occurs when the water is being applied faster than the soil can absorb it. Most water that runs off is wasted and never gets into the root zone. To find out how long each irrigation should be test your system the same time of morning you usually irrigate, to make sure the pressure is comparable. Check your watch when run-off begins. This is the maximum amount of time your system should be operated per watering. So, if the LAWN WATERING GUIDE indicates you should water one hour a week and run-off occurred at 20 minutes, you should water three times a week for twenty minutes each.

The type of soil you have has a lot to do with when run-off will occur. Most soils in Loma Linda are sandy loam. They take in water faster than clay soils and most have excellent drainage.

A lot of water can be wasted in sandy and sandy loam soil when too much water is put on at one time. This water can travel below the plant root system long before it can ever be used. While water running off the top of soil is more common with clay soils, water wasted below the root zone is more common in sandy soils.

To check how deep the water is going, push a metal rod, soil probe, or straightened coat hanger into the soil a day or so after watering. It will penetrate easily where the soil is moist, and resist as the soil becomes drier at deeper levels.

While lawns, groundcovers and shrubs should be watered to a depth of about a foot, trees should be watered deeper. They should be watered to a depth of at least two feet for support as they mature.

Most plants do not tolerate wet soil that does not have a chance to dry down some between waterings. Plant roots need oxygen as well as water to grow and develop normally. In general, trees and deep-rooted plants prefer longer intervals between waterings than shallow-rooted plants.

WHAT IF YOUR LAWN DOESN'T HAVE AN AUTOMATIC SPRINKLER SYSTEM?

If you use a hose-end sprinkler system to water your lawn, you are not alone! The majority of Californians use such systems, which can do a very good job.

The good news is, you can still save water and have an attractive landscape without having to convert to a modern system. Here are some ways to reduce water waste and retain an attractive landscape:

- If possible, choose a sprinkler that throws water in a low arc.
- Check for leaks between the faucet and hose. A new rubber washer is inexpensive and easy to install.
- Place the sprinkler in a central location that waters lawn all around it, avoiding the sidewalk, driveway or house.
- When watering lawn areas with trees blockage, avoid dry areas by moving the sprinkler to several locations. (Keeping tree trunks dry is also good for the trees!)
- Water until just before run-off begins. You may need to cycle waterings or turn down the volume in order to get the water into the soil.
- Check how deeply you are watering. Lawns and flower beds should be watered to about one foot; shrubs one to two feet, and trees two to three feet deep.
- The LAWN WATERING GUIDE on page 6 can be used with a hose-end sprinkler system. Just be sure the same rate is applied at each watering. To keep sprinkler output consistent with each watering, keep a record of how many turns the faucet made at the preferred volume.

- Keep track of the total watering time with an inexpensive household timer with a buzzer.
- Water in early morning to reduce evaporation, and avoid watering during windy periods.
- Water trees and shrubs with a conventional hose on low volume, allowing water to soak in slowly and deeply. Or, use a soaker hose.

HOW TO SAVE EVEN MORE WATER IN YOUR LAWN

Besides making necessary repairs on your sprinkler system and using the LAWN WATRERING GUIDE (page 6) to schedule waterings, there are other things you can do to save water and keep your lawn looking its best.

Here are some suggestions for a healthy lawn, in or out of drought:

- Water early in the morning to reduce soil evaporation.
- Remove thatch in spring if over one-half inch thick.
- Control weeds. They compete for water, light and nutrients.
- Do not let your lawn grown too tall. Maintain your lawn at the following height by mowing when it is 1/3 higher:

Turfgrass	***Mowing Height***
Tall Fescue	1.5 – 3.0”
Perennial Ryegrass	1.5 – 2.5”
Kentucky Bluegrass	1.5 – 2.5”
Bermudagrass	0.5 – 1.0”
Zoysiagrass	0.5 – 1.0”
St. Augustinegrass	0.5 – 1.5”

- Aerate as necessary to avoid soil compaction. P)roper aeration requires removal of plugs. If you do not own an aerator, you can rent one locally. Aeration allows water to move more freely into the soil.

HOW TO KEEP YOUR TREES HAPPY

Besides beauty, trees provide shade, cooling, privacy and oxygen. Taking care of your trees should be a high priority, since they take several years to mature.

Here are some ways you can keep your landscape trees healthy and reduce water waste:

- Water trees separately from surrounding plants. Trees prefer fewer, deeper waterings than your lawn. A drip emitter system (with emitters on two sides of the tree, mini-sprinklers, or a garden hose work well.

- Water your trees to a depth of at least two feet. This will help promote a deep root system. A small shovel, straightened coat hanger or soil probe can help you gauge how deep the water goes after each watering. They will move through a moist soil fairly easily and stop when drier soil is reached.

- Water trees based on seasonal water demand. Trees benefit most from spring and summer waterings. When water is scarce, one or two thorough spring waterings may supply enough water for the season.

- Keep turfgrass and other plants several inches from tree trunks. This promotes faster tree growth and reduces completion for water. Also, tree damage and death from weed whips and lawnmowers is avoided.

- Apply mulch around trees, keeping it a few inches away from tree trunks. Mulch reduces water loss from soil and also controls weeds. Remember to water through the mulch and into the root area.

- Control weeks around trees. Hand weeding, followed by a mulch application, works well. Weeds often out-compete trees for water.

- Avoid soil compaction around trees. Tree roots need oxygen and water. When soil is compacted, both can be limiting. Construction and related activities should be kept several feet from tree trunks.

- Do not fertilize ornamental landscape trees each year. Nitrogen induces new growth, which increases water need. Many trees do well for several years without being fertilized.

- Prune trees only when necessary. Remove dead and diseased wood, dangerous branches, and suckers growing from the base of the tree. **DO NOT TOP TREES!** Major pruning should be done every three to five years, preferably by a Certified Arborist.

- When planting a new tree, make sure you dig a hole about twice as wide as the pot. Soil amendments are not usually necessary, and can lead to water penetration problems if not deeply and evenly mixed.

KEEPING SLOPES BEAUTIFUL IN LOMA LINDA

Loma Linda is renowned for beautiful hillsides, planted in lush vegetation. Besides offering beauty, slopes planted with groundcovers and shrubs can greatly reduce soil erosion. And, planted slopes do not necessarily take lots of water. In fact, if the right plants and irrigation system are selected, you will find you can apply about the same amount of water to the slope as you would to the same plants on a flat area.
The main challenge to watering slopes is applying enough water to the upper plantings without lots of water running off below. Drip systems, such as emitters on drip lines or mini-sprinkler, are recommended, rather than high-volume conventional sprinkler systems. Drip systems greatly reduce run-off because they apply a smaller amount of water per time period, allowing it to soak in. They also apply water in the root zones rather than a large area of soil between plants.

Select a drip system that does not apply more than one-half inch of water per hour. Otherwise, lots of run-off will occur. Cycling water in several short intervals is recommended when watering slope plantings. Try applying water for 5 to 10 minutes every hour and repeat the cycle to allow the water to soak into the soil before running off.

The **LAWN WATER GUIDE** (page 6) tells you the total number of minutes to water turfgrass each week. Most groundcovers take about the same amount of water as warm-season turfgrass. To determine how many cycles you need to apply, divide the weekly minutes required for turfgrass by the length of each cycle.

MULCHES CAN SAVE WATER

Mulches are a great way to save water, and improve the looks of your landscape. Mulches can be used around trees, shrubs, and garden plantings. Mulches differ from soil amendments in that mulches are added on top the soil, while soil amendments are mixed into the soil Mulches also reduce weed growth, and buffer soil temperatures.

What products make the best mulch? Backyard compost and decomposed lawn clippings are often recycled into mulch by homeowners. There are dozens of commercially available products that work well also. These include: decorative bark, gravel, redwood sawdust, peat moss, and composted sewage sludge mixtures.

While yard waste can make great mulch, make sure it is well decomposed before using it. If you can still recognize leaves, turfgrass and wood chips, it is **not** ready to use! Well-decomposed mulch resembles peat moss and smells earthy. Undecomposed products can rob nitrogen from the soil, and add weeds, diseases, and insects. And, fresh lawn clippings may contain herbicides harmful to your trees and shrubs.

The best time to apply mulch is in late spring, when the soil has had a chance to warm up. Mulches work great around trees, but keep them several inches from the trunk and outward toward the “drip line.” Mulch touching the trunk of trees can result in crown rot.

Mulching shrub plantings is also a good idea. Mulches should cover the soil just outside the planting. Mulches can also save lots of water in flower bed plantings when added between plants throughout the bed.

Since mulches work by preventing sunlight from reaching the soil, dark products work the best. You need at least four to six inches of mulch to be effective, unless you use a black plastic underlay, If you choose to use black plastic, you will still need about two inches of mulch over the top.

A common mistake when mulches are used is to forget to water through the mulch layer into the soil. If water doesn't get down to the plant roots, plants have no way of using the water. Drip systems are very useful in mulched plantings if positioned right. Or, use a garden hose to water through the mulch.

WHEN THERE JUST ISN'T ENOUGH WATER

When there just isn't enough water to apply the optimum amount to your landscape plants, applying what water you have, at the right time, can save your plants for at least one season.

To keep landscape trees alive, one thorough watering in early spring or summer may be enough for the entire season.

Keeping fruit and nut trees alive during a water shortage is also possible, although fruit production will probably stop. This is because deciduous fruit and nut trees need at least some water continuously, from bloom until harvest, to produce fruit. Citrus trees need lots of moisture during spring to set fruit, and steady water in summer and fall to produce average sized fruit. But, fruit and nut trees can be kept alive with a few early season waterings.

Almost all established shrubs can survive long periods of dry soil. One thorough spring watering will keep most shrubs alive for at least one season. Shrubs are more expendable than mature trees, and can be replaced late if there just isn't enough water for both.

Lawns can survive some water restrictions. Bermudagrass will go dormant from lack of adequate water, but will revive once enough water is restored. For active growth, warm-season turfgrasses require spring and summer soil moisture. Cool-season turfgrasses. They need to be watered in fall and winter for active growth.

The LAWN WATERING GUIDE indicates weekly water requirements for **optimum** growth of warm and cool-season turfgrasses. Both can survive on reductions of about 40%, although they will probably look unsightly for the rest of the season.

Most groundcover will survive on about one-half the amount of water received under optimum conditions. They should be watered about once every four to six weeks from April through September. Some groundcovers will lose leaves and may die back under severe water reductions.

SIGNS OF THIRSTY PLANTS

Plants usually show signs of stress when they are thirsty. If you give them a drink within a short time of these signals, most plants will start looking better very quickly. Of course, some plants are more sensitive to water stress than others, so it is best to mot get into the habit of waiting too long before watering, once symptoms start to develop.

While plants vary somewhat in signaling water stress, most show the following symptoms:

- New leaves are smaller than normal
- New leaves are darker, grayish, or dull
- Plants lose leaves and branches die back
- Leaves wilt
- Turfgrass eaves curl or bend
- Turfgrass retains a footprint a half hour after being walked on.

Barton Road Xeriscape Plant Palette

- ***Waterman Avenue to University Avenue/Oakwood Drive Median:***

	Botanical Name:	Common Name:	Flower Name:
High Shrub:	Caesalpinia pulcherrima	Red Bird of Paradise	Orange-Red
Medium Shrub:	Ceanothus 'Concha'	California Lilac	Blue
Medium Shrub:	Leucophyllum frutescens 'Compacta'	Texas Ranger	Silver/Purple
Groundcover:	Lantana 'Spreading Sunshine'	Yellow Lantana	Yellow
Groundcover:	Gazania 'White'	White Gazania	White
Groundcover:	Drosanthemum floribundum	Pink Iceplant	Bright Pink
Groundcover:	Archostaphylos 'Emerald Carpet'	Dwarf Manzanita	Dark Green
Groundcover:	Myoporum parvifolium	Dwarf Myoporum	Green
Grass:	Muhlenbergia rigens	Deer Grass	Light Green

- ***University Avenue/Oakwood Drive Intersection:***

	Botanical Name:	Common Name:	Flower Color:
Planting Area 1:	Justica spicigera	Mexican Honeysuckle	Yellow-Orange
Planting Area 2:	Verbena puchella	Rock Verbena	Purple
Planting Area 3:	Hypericum calycimum	St. Johnswart	Yellow
Planting Area 4:	Salvia leucantha	Salvia	Blue

- ***University Avenue/Oakwood Drive to Campus Street Medians:***

	Botanical Name:	Common Name:	Flower Color:
High Shrub:	Sophora secumdiflora	Texas Laurel	Purple
Medium Shrub:	Nerium oleander 'Petite Pink'	Petite Pink Oleander	Shell Pink
Medium Shrub:	Ceanothus 'Concha'	California Lilac	Blue
Medium Shrub:	Ruellia peninsularis	Ruellia	Deep Blue
Groundcover:	Baccharis 'Centennial'	Dwarf Baccharis	Yellow Green
Groundcover:	Dalea greggii	Indigo Bush	Blue
Groundcover:	Gazania 'White'	White Gazania	White

- ***Sierra Vista Drive Intersection*:**

	Botanical Name:	Common Name:	Flower Color:
Planting Area 1:	Cistus cobariensis	Rockrose	White/Pink
Planting Area 2:	Verbena pulchella	Rock Verbena	Purple/Pink
Planting Area 3:	Pennisetum setaceum ‘Cupreum’	Burgundy Ftn. Grass	Burgundy

- ***Campus Drive Intersection*:**

	Botanical Name:	Common Name:	Flower Color:
Planting Area 1:	Justica spicigera	Mexican Honeysuckle	Yellow-Orange
Planting Area 2:	Lavendula dentate	Lavendar	Grey Foliage
Planting Area 3:	Salvia greggii	Autumn Sage	Red
Planting Area 4:	Verbena rigida	Peruvian Verbena	Purple
Planting Area 5:	Oenethera berlandieri	Mexican Primrose	Light Pink

- ***Campus Drive to Anderson Street Median:***

	Botanical Name:	Common Name:	Flower Color:
High Shrub:	Caesalpinia pulcherrima	Red Bird of Paradise	Orange-Red
Medium Shrub:	Leucophyllum frutescens ‘Compacta’	Texas Ranger	Silver/Purple
Medium Shrub:	Dalea pulchra	Bush Dalea	Grey/Purple
Groundcover:	Lantana ‘Spreading Sunshine’	Yellow Lantana	Yellow
Groundcover:	Baccharis ‘Centennial’	Dwarf Baccharis	Yellow Green
Groundcover:	Gazania ‘White’	White Gazania	White
Groundcover:	Myoporum parvifolium	Dwarf Myoporum	Green
Grass:	Muhlenbergia rigens	Deer Grass	Light Green

- ***Anderson Street Intersection:***

	Botanical Name:	Common Name:	Flower Color:
Planting Area 1:	Lantana montevidensis	Lavender Lantana	Lavender
Planting Area 1:	Lantana sellowiana	White Lantana	White
Planting Area 2:	Santolina chamaecyparissus	Grey Cotton	Grey
Planting Area 3:	Penniseturn setaceum ‘Cupreum’	Burgundy Ftn. Grass	Burgundy

- ***Anderson Street to Hillcrest Street Median:***

	Botanical Name:	Common Name:	Flower Color:
High Shrub:	Caesalpinia mexicana	Yellow Bird of Paradise	Yellow
Medium Shrub:	Leucophyllum frutescens ‘Silver Cloud’	Dwarf Texas Ranger	Silver/Purple

Medium Shrub:	Ruellia peninsularis	Ruellia	Deep Blue
Groundcover:	Lantana ‘Radiation’	Orange Lantana	Orange-Red
Groundcover:	Dalea greggii	Indigo Bush	Grey/Blue

- ***Hillcrest Street Intersection:***

	Botanical Name:	Common Name:	Flower Color:
Planting Area 1:	Achillea sp.	Woolly Yarrow	White, Yellow, Red
Planting Area 2:	Salvia leucantha	Salvia	Blue
Planting Area 3:	Muhlenbergia rigens	Deer Grass	Light Green

- ***Loma Linda Drive to Mountain View Avenue Median:***

	Botanical Name:	Common Name:	Flower Color:
High Shrub:	Caesalpinia pulcherrima	Red Bird of Paradise	Orange-Red
Medium Shrub:	Salvia clevelandi	Cleveland Sage	Blue
Medium Shrub:	Ceamothus ‘Concha’	California Lilac	Blue
Groundcover:	Lantana ‘Spreading Sunshine’	Yellow Lantana	Yellow
Groundcover:	Gazania ‘White’	White Gazania	White
Groundcover:	Myoporum parvifolium	Dwarf Myopourm	Green
Grass:	Muhlenbergia rigens	Deer Grass	Light Green

- ***Mountain View Avenue Intersection*:**

	Botanical Name:	Common Name:	Flower Color:
Planting Area 1:	Salvia greggii	Autumn Sage	Red
Planting Area 2:	Achillea sp.	Woolly Yarrow	Pink, White
Planting Area 3:	Verbena pulchella	Rock Verbena	Purple
Planting Area 4:	Hypericum calycinum	St. Johnswort	Yellow
Planting Area 5:	Penstemon superbus	Coral Penstemon	Red

- ***Mountain View Avenue to Newport Avenue Intersection*:**

	Botanical Name:	Common Name:	Flower Color:
High Shrub:	Caesalpinia mexicana	Yellow Bird of Paradise	Yellow
Medium Shrub:	Nerium oleander 'Mrs. Roeding'	Double Pink Oleander	Pink
Medium Shrub:	Leocophyllum frutescens 'Compacta'	Texas Ranger	Silver/Purple
Groundcover:	Arctostaphylos 'Emerald Carpet'	Dwarf Manzanita	Green
Groundcover:	Lantana 'Radiation'	Orange Lantana	Orange-Red
Groundcover:	Drosanthemum floribundum	Pink Iceplant	Bright Pink

- ***Newport Avenue Intersection*:**

	Botanical Name:	Common Name:	Flower Color:
Planting Area 1:	Verbena pulchella	Rock Verbena	Purple
Planting Area 2:	Pennisetum setaceum 'Cupreum'	Burgundy Ftn. Grass	Burgundy

- ***Hillcrest Street to Benton Street Median:***

	Botanical Name	Common Name:	Flower Color:
High Shrub:	Caesalpinia pulcherrima	Red Bird of Paradise	Orange-Red
Medium Shrub:	Nerium oleander 'Petite Pink'	Petite Pink Oleander	Shell Pink
Medium Shrub:	Calliandra californica	N.C.N.	Red
Groundcover:	Lantana 'Spreading Sunshine'	Yellow Lantana	Yellow
Groundcover:	Gazania 'White'	White Gazania	White
Groundcover:	Myoporum parvifolium	Dwarf Myoporum	Green
Grass:	Muhlenbergia rigens	Deer Grass	Light Green

- ***Benton Street Intersection*:**

	Botanical Name:	Common Name:	Flower Color:
Planting Area 1:	Tulbaghia violacea	Society Garlic	Light Blue
Planting Area 2:	Lavendula dentate	Lavendar	Grey Foliage
Planting Area 3:	Cistus skanbergii	Rockrose	Pink
Planting Area 4:	Salvia leucantha	Salvia	Blue
Planting Area 5:	Penstemon superbus	Coral Penstemon	Red

- ***Benton Street to Loma Linda Drive Median*:**

	Botanical Name:	Common Name:	Flower Color:
High Shrub:	Caesalpinia mexicana	Yellow Bird of Paradise	Yellow
Medium Shrub:	Ruellia peninsularis	Ruellia	Deep Blue
Medium Shrub:	Ceanothus ‘Concha’	California Lilac	Blue
Groundcover:	Lantana ‘Radiation’	Orange Lantana	Orange-Red
Groundcover:	Dalea greggii	Indigo Bush	Grey/Blue

- ***Loma Linda Drive Intersection*:**

	Botanical Name:	Common Name:	Flower Color:
Planting Area 1:	Justica spicigera	Mexican Honeysuckle	Yellow-Orange
Planting Area 2:	Santolina chamaecyparissus	Grey Cotton	Grey
Planting Area 3:	Lantana montevidensis	Lavender Lantana	Lavender
Planting Area 3:	Lantana sellowiana	White Lantana	White
Planting Area 4:	Oenothera berlandieri	Mexican Primrose	Pink
Planting Area 5:	Penniseturn setaceum ‘Cupreum’	Burgundy Ftn. Grass	Burgundy